

SKULSKI, L.

Distr: 4E20(j)

Absorption spectra of azo dyes. II. Spectra of derivatives of 4-formyl, 4-nitro-, and 4-(2-nitrovinyl)azobenzene. Lech Skulski and Tadeusz Urbański (Politechnika, Warsaw). *Roczniki Chem.* 34, 443-66 (1960) (English summary); cf. CA 54, 17044c. — Near ultraviolet and visible absorption spectra of monoazo dyes of the type  $p\text{-YC}_6\text{H}_4\text{N=NAr}$  are described (Y = CHO, NO, CH:CHNO, H, CH:CH) and discussed. A. Kreglewski

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11, 5

SKULSKI, Lech; URBANSKI, Tadeusz

Reactions and absorption spectra of compounds deriving from *ω*-nitro-styrene. IV. Absorption spectra of *ω*-nitrostyrene and its para-substituted derivatives. Roczniki chemii 34 no.5:1307-1328 '60.  
(EEAI 10:9)

1. Department of Organic Technology II, Institute of Technology,  
Warszawa.

(Absorption spectra) (Nitrostyrene)

S/081/63/000/004/002/051  
B102/B186

AUTHOR: Skulski, L.

TITLE: An empirical spectral method of qualitative characterization of substituents. I.

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1963, 16-17, abstract 4B71 (Bull. Acad. polon. sci. Ser. sci. chim., v. 10, no. 4, 1962, 201-206; [Eng; summary in Russ.] )

TEXT: When two substituents are introduced into the phenyl ring the intense K-band of the UV-spectrum is shifted, though not to the extent of the additive sum of the shifts occurring when one substituent is introduced. The quantitative characteristics of the deviations from additivity can be described by the empirical formula proposed:

$$\Delta\lambda_{X,Y}(\text{exp})/\Delta\lambda_{X,Y}(\text{calc}) = (\lambda_{X,Y}(\text{exp}) - \lambda_{H,H}(\text{exp})) / (\lambda_{H,X}(\text{exp}) - \lambda_{H,H}(\text{exp}) + (\lambda_{H,Y}(\text{exp}) - \lambda_{H,H}(\text{exp}))) \quad (1),$$

where  $\lambda_{X,Y}(\text{exp})$ ,  $\lambda_{H,X}(\text{exp})$ ,  $\lambda_{H,Y}(\text{exp})$  and  $\lambda_{H,H}(\text{exp})$

denote the wavelengths of the K-band maxima of  $h-X-C_6H_4-Y$ ,

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An empirical spectral method of ...

$H - C_6H_4 - X$ ,  $H - C_6H_4 - Y$ , and  $H - C_6H_4 - H$ , respectively, measured in one and the same solvent. The applicability of Eq. (1) to the spectra of solutions of various disubstituted benzenes in non-polar hydrocarbons, ethanol, methanol and water was checked on the basis of literature data and special measurements. Benzenes with  $NO_2$ ,  $CHO$ ,  $COCH_3$ ,  $N(CH_3)_2$  and  $NH_2$  groups as substituents showed the closest agreement with Eq. (1).

[Abstracter's note: Complete translation.]

Card 2/2

SKULSKI, Lech; URBANSKI, Tadeusz

Absorption spectra of azo dyes. III. Roczniki chemii 36 no.5:  
801-820 '62.

1. Department of Organic Technology II, Institute of Technology,  
Warsaw.

SKULSKI, Lech; PLENKIEWICZ, Jan

Reactions and absorption spectra of -nitrostyrene derivatives.  
Pt. 6. Roczniki chemii 37 no.1:45-67 '63.

1. Department of Organic Technology II, Institute of Technology,  
Warsaw.

SKUDZKI, L.

Application of proton nuclear magnetic resonance spectroscopy to problems of amide-iminol and some other types of tautomerism.  
Bul chim PAN 12:1051-1056 1967.

1. Department of Organic Technology II, Technical University,  
Warsaw, Presented by T. Urbanski.

SKULSKI, L.

An empirical spectral method of characterization of substituents.  
Pt.2. Bul chim PAN 12 no.10:719-727 '64.

1. Department of Organic Technology II of Warsaw Technical  
University. Submitted August 1, 1964.



SKUL'SKIY, I. A.

The application of carbon-14 to the study of the mechanism

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*Chem*

of catalytic formation of asymmetric ketones. V. D. Nefedov, M. A. Toropova, and I. A. Skul'skiy (A. A. Zhdanov State Univ., Leningrad). *Zhur. Fiz. Khim.* 29, 2238-43(1955).— The mechanism of formation of asymmetric ketones from carboxylic acids contg.  $C^{14}$  atoms was studied by catalytic pyrolysis of phenylacetic acid + AcOH (with the  $C^{14}$  atom in the COOH group of either of the acids),  $PhC^{14}OOH$  + AcOH, and isobutyric, valeric, and hexanoic acids with  $Me-C^{14}OOH$ . The vapors of the carboxylic acid mixts. were passed over a Th catalyst at 430-450° in an atm. of N. The prepn. and testing of the raw materials and the products, and the app. used in the activity testing of the liquids are described. The activity measurements of ketones obtained by catalytic pyrolysis and by dry distn. of the acids proved that the reaction mechanism of the ketone formation was the same by both methods. The results obtained are discussed qualitatively, on the assumption of a difference in the bond strength between the C atoms of the acid radicals formed and with the COOH group, and that the stability of the radicals formed were not equal.

W. M. Sternberg

*PM*

5. 10. 1957 I. H.

AUTHOR: SKUL'SKIJ, I. A. PA - 2269  
 TITLE: The Conference on the Use of Marked Atoms for Chemical Examinations  
 and the Control of Production. (Russian)  
 PERIODICAL: Atomnaja Energiia, 1957, Vol 2, Nr 2, pp 186 - 188 (U.S.S.R.)  
 Received: 3 / 1957 Reviewed: 4 / 1957  
 ABSTRACT: At Leningrad the first municipal conference on the use of radio-  
 active indicators in chemistry as well as in industry took place  
 from October 30 to November 1. In the reviewer's opinion the word  
 "municipal" here means that all institutes situated in Leningrad  
 were represented. On the first day of the conference a report on  
 the use of marked atoms in analytical chemistry was delivered. Ac-  
 cording to V.M.VDOVENKO's lecture, radioactive isotopes are used  
 a great deal for investigating solubility, deposits, new methods of  
 separation, as well as for the analysis of substances that are dif-  
 ficult to separate, natural radioactive elements, etc. The use of  
 marked atoms in analytical chemistry offers two essential advantages:  
 Their enormous sensitiveness makes it possible to measure quantities  
 of substances of the order of a fraction of a microgram and to  
 carry out analyses without separating the substance to be investi-  
 gated. According to V.M.VDOVENKO there are three main trends in the  
 present development of this method: analysis of natural radioactivity,  
 the activation analysis, and the method of marked atoms. Works written  
 on the subject by Soviet and Leningrad authors are cited.

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The Conference on the Use of Marked Atoms for Chemical Examinations and the Control of Production.

This survey was followed by reports on the original investigations in the various Leningrad institutes. They deal e.g. with the following subjects: investigation of the extractional separation of zirconium and hafnium by means of marked atoms ( $Zr^{95}$ ,  $Hf^{181}$ ), radio-metric determination of some iodines that are difficult to dissolve, quick separation of the elements of radioactive rare earth without using a pH-meter. On the second day of the conference there were lectures on investigations within the field of organic chemistry and on the synthesis of various organic and anorganic preparations. N.A.DOMNIN lectured on "The possibilities of investigating molecular structure and the mechanism of reactions by means of marked atoms". According to this opinion there are three main problems connected with these investigations: the study of chemical binding in organic compounds, the study of the molecular structure of organic compounds, and the study of the mechanism of organic reactions. The subjects of lecture are mentioned.

On the third day there were lectures on the methods of applied radiochemistry and on some procedures for the use of these methods. The following themes among others. dealt with: fundamental principles and prospects of the use of scintillation as well as mass-

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The Conference on the Use of Marked Atoms for Chemical Examinations  
and the Control of the Production.

spectrometric methods in applied radiochemistry, the determination  
of a radioactive contamination by means of scintillation-spectro-  
meters e.t.c.

ASSOCIATION: Not given

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress.

Card 3/3

STARIK, I.Ye.; NATNER, A.P. [deceased]; ~~REDACTED~~ SKIY, I.A.; GAVRILOV, E.A.

Conditions of microquantities of radionuclides in solutions. Part 3:

Condition of  $Zr^{95}$  in aqueous solutions. Zhur. neorg. khim. 2 no.5:

1175-1182 May '57.

(MLRA 10:8)

(Zirconium-Isotopes) (Water)

AUTHORS: Starik, I. Ye., Skul'skiy, I. A. SOV/62-58-10-22/25

TITLE: Adsorption of Microquantities of Radioactive Elements  
on Non-Ion Exchange Adsorbents (Adsorbtsiya mikrokolichestv  
radioelementov na neionoobmennyykh adsorbentakh)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,  
1958, Nr 10, pp 1278 - 1279 (USSR)

ABSTRACT: The rules governing the non-ion exchange adsorption  
of radioactive elements have remained almost undiscovered.  
The investigation of these rules is of interest because  
they play a part not less important than that of ion exchange  
adsorption. The authors of this letter studied the  
adsorption of  $Zr^{95}$ ,  $Nb^{95}$ ,  $Th^{234}$ ,  $Pa^{233}$ ,  $Tl^{204}(I)$  and  $Cs^{137}$   
on fluoroplast-4 and paraffin. The surfaces of these adsorbents  
are hydrophobic and do not have ion exchange properties.  
The radioactive elements among the conditions inves-  
tigated were in ionic or molecular disperse state. The  
adsorption was discovered as a function of the con-  
centration versus  $HNO_3$ , as well as of the  $NH_4NO_3$  and  $KNO_3$   
salts. It turned out that in the interval from 0,1 to

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Adsorption of Microquantities of Radioactive Elements on Non-Ion Exchange Adsorbents SOV/62-58-10-22/25

3-5 N  $\text{HNO}_3$ ,  $\text{Zr}^{95}$ ,  $\text{Nb}^{95}$ ,  $\text{Th}^{234}$  and  $\text{Pa}^{233}$  were adsorbed on fluoroplast-4 and paraffin (quantitatively 2-6% from 1 ml solution per 1  $\text{cm}^2$  adsorbent): it was possible to increase the adsorption of these radioactive elements several times by the addition of  $\text{NH}_4\text{NO}_3$  and  $\text{KNO}_3$ . The adsorption intensity apparently depends on the formation of neutral complexes of the type  $[\text{Me}(\text{OH})_x(\text{NO}_3)_y]^0$ . Similar dependences on the nitric acid concentration were also found by other scientists. Based on the data obtained the authors of this paper are of opinion that the "specific adsorption" must be regarded as a molecular one. The absence of the adsorption of  $\text{Cs}^{137}$  and  $\text{Tl}^{204}$  (I) on fluoroplast-4 and paraffin has to be explained by the highly basic elements (which under the conditions investigated do not form any non-charged compounds).

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Adsorption of Microquantities of Radioactive Elements      SOV/62-93-10-22/25  
on Non-Ion Exchange Adsorbents

ASSOCIATION: Radiyevyy institut im.V.G.Khlopina Akademii nauk SSSR  
(Radium Institute imeni V.G.Khlopin AS USSR)

SUBMITTED:      June 13, 1958

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SKUL'SKIY, I. A., Candidate Chem Sci (diss) -- "The state of microquantities of Zr-95 and Nb-95 in aqueous nitrate solutions". Leningrad, 1959. 20 pp (Radium Inst im V. G. Khlopin of the Acad Sci USSR), 175 copies (KL, No 26, 1959, 123)

STARIK, I.Ye.; SKUL'SKIY, I.A.; YURTOV, A.I.

State of tracers of radioactive elements in solutions. Part 5:

State of zirconium in nitrate solutions. Radiokhimiya 1 no.1:

66-76 '59.

(MIRA 12:4)

(Zirconium--Isotopes)

(Nitrates)

STARIK, I.Ye.; SKUL'SKIY, I.A.

State of tracers of radioactive elements in solutions. Part 6:  
State of niobium in aqueous solutions. Radiokhimiia 1 no.1:77-81  
'59. (MIRA 12:4)  
(Niobium--Isotopes) (Solution (Chemistry))

STARIK, I.Ye.; AMPELOGOVA, N.I.; GINZBURG, F.L.; LANDET, N.S.; SKUL'SKIY, I.A.;  
SHCHERBETKOVSKIY, V.N.

Molecular state of ultramminute quantities of radioelements in  
solutions. Radiokhimiya 1 no.4:370-378 '59. (MIRA 13:1)  
(Radioactive substances)

STARIK, I.Ye.; SKUL'SKIY, I.A.

State of microquantities of radioelements in solutions. Part 9:  
State of microquantities of zirconium in the range of hydrolysis.  
Radiokhimiia 1 no.4:379-383 '59. (MIRA 13:1)  
(Zirconium)

SKULISKI, F. A.

Q IN 2 BUREAU, F. L.

21 (O), 5 (O)

AUTHOR: Shchebetkovskiy, V. K.

TITLE:

All-Union Symposium on Radiochemistry (Vsesoyuznyy simpozium po radiokhimii)

PERIODICAL:

Atomnaya energiya, 1959, Vol. 7, No. 2, pp 175-176 (1959)

ABSTRACT:

A symposium was held in Leningrad from 4 to 5 March 1959. More than 200 participants from different institutes in Moscow, Leningrad, Kiev, Novosibirsk, Tbilisi and Gorkiy attended it. Twenty-eight papers were read. The following are mentioned: I. Ye. Stark: On the problem of the molecular state of micromolecules of radioactive elements in solutions; I. Ye. Stark, N. I. Anisimov, P. L. Ginzburg, A. I. Il'inskiy, I. A. Kul'skiy, L. D. Shevchenko, Condition of radioactive elements occurring in microconcentrations of solutions (Zr, Am, Pa, Po); M. K. Yakovlev, P. A. Shurshalina: Application of the dialysis method for examination of uranium carriers in natural bodies of water; Y. A. Puzanova, Ye. P. Lavrovskiy: Ion exchange of the multivalent plutonium with chlorides; Determination of the concentration and the instability constants by ion exchange of the cerium and neodymium; A. B. Borkovskiy: Complex formation of plutonium and neodymium with the anions of ethylene diamine tetraacetic acid (EDTA) and oxalic and phosphoric acid; A. M. Zerkov, A. I. Il'inskiy: A new method for the determination of ion exchange capacities of different solutions by application of ion exchange resins of different swelling capacities; M. B. Vysokotatovskiy: "Radiochemical determination of the concentration of the non-existence of complex formation between potassium and EDTA by application of the ion exchange and the potentiometric methods; V. K. Yuzavskiy, Ye. A. Selimov: Determination of the conditions of compounds to be extracted in the organic phase (hydration of uranyl nitrate with ester); M. K. Yakovlev, N. F. Aleksandrovskiy: Degree of hydration of nitric acid in diethyl ether of the diethylene glycol; M. K. Yakovlev, N. F. Aleksandrovskiy: Degree of solvation of the nitric acid in diethyl ether of the diethylene glycol; A. I. Il'inskiy: Determination of the dependency of the distribution coefficients between the organic and the aqueous solution in order to fixate the concentration of the substance; A. I. Il'inskiy: starts; V. I. Puzanov, P. A. Shurshalina: Determination of hexavalent tungsten with aniline from hydrochloric radiation of hexamanganate on substitution of hydrogen in benzol by the recoil atoms  $^{32}\text{P}$ ,  $^{132}\text{I}$  and  $^{124}\text{Sb}$ ; B. G. Dantilyev: Lecture on the recoil atoms from the reactions of  $^{16}\text{O}(\alpha, n)^{19}\text{F}$ ,  $^{19}\text{F}(\alpha, p)^{22}\text{Ne}$  in a medium of cyclo hydrocarbons; L. I. Il'inskiy: Lecture on the influence of the  $\text{H}^{103}$  and  $\text{H}^{106}$  ions on the reduction velocity of hexavalent plutonium under the influence of its own  $\alpha$ -radiation. In the course of thorough discussion it was established that the comprehension of the conditions of radioactive elements in solution are of eminent importance for the whole range of radiochemistry. More studies have to be made in this field as were made before. A better coordination of all the institutes which are occupied with this problem will yield good results in the future.

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S/186/61/003/004/003/007  
E037/E119

21.4200

also 2209

AUTHORS: Starik, I.Ye., Skul'skiy, I.A., and Shchebetkovskiy, V.N.

TITLE: Adsorption of radioactive isotopes on non-ion-exchange polymeric adsorbents. I. Adsorption of zirconium on fluoroplast-4 (polytetrafluoroethylene) from hydrochloric acid solutions

PERIODICAL: Radiokhimiya, 1961, Vol.3, No.4, pp. 428-434

TEXT: So far most studies have been concerned with ion-exchange and colloidal adsorption of radioactive isotopes. To establish the features of molecular adsorption of radioactive isotopes it is most expedient to study a particular element under conditions such that it may form uncharged compounds in solution. In such a case it is possible to consider the molecular adsorption as a distribution of neutral particles of electrolyte between liquid and solid phases, and to compare the results with distribution of the element in extraction processes. Zirconium is particularly suitable for such a study as in aqueous solution it may form neutral complexes of type  $[Zr(OH)_x A_{x-4}]^0$  (Ref.5: B.A.Lister, L.H. McDonald. J.Chem.Soc., 4315 (1952), where A is an anion. X

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Adsorption of radioactive isotopes on ... S/186/61/003/004/003/007  
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The composition of the complexes depends on the composition of the solution. In this way we may study adsorption as a function of the solution composition and obtain information on the dependence of adsorption on the state of the element in solution in order to deduce the mechanism of molecular adsorption. The present work considers Zr adsorption on polytetrafluoroethylene (PTFE) from hydrochloric acid solutions, Zr desorption from PTFE surfaces with tributyl phosphate (TBP), and the extraction of Zr into TBP. It was necessary to take special measures to ensure that tracer Zr<sup>95</sup> and carrier zirconium are in the same state, e.g. as regards hydrolysis. Adsorption was studied on polished PTFE discs 5.5 cm<sup>2</sup> in area and 1.5 mm thick. Surface treatment with hot concentrated sulphuric acid and water guaranteed rapid and complete desorption of Zr<sup>95</sup> while not affecting the adsorption properties. Zr<sup>95</sup> activity was measured on torsion counter with Al foil to absorb the Nb<sup>95</sup> β-radiation from the Nb formed in the course of the experiment. The dependence of zirconium adsorption from 1.2 N HCl on zirconium concentration may be expressed by a Freundlich equation of form

$$G = 10^{-3} C^{0.91}$$

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where  $G$  is the adsorption in g.atom Zr/cm<sup>2</sup> and  $C$  is the zirconium concentration in g.atom/ml. For tracer concentrations  $K = G/C$  is independent of  $C$  and is a function only of the state of the Zr. With increasing Zr concentration the adsorption approximates to that corresponding to a monolayer, which indicates that adsorption is taking place over the whole surface and not on individual parts. The temperature dependence of the adsorption was studied in 10 N HCl to avoid hydrolytic effects which are also temperature dependent. The value obtained for the heat of adsorption on the hydrophobic PTFE surface is  $2.2 \pm 0.2$  kcal/mole, which is usually characteristic for van der Waals adsorption. The dependence of Zr<sup>95</sup> adsorption on HCl concentration may be explained by the change in state of the Zr with changing H<sup>+</sup> and Cl<sup>-</sup> concentration. Calculations based on published complex formation constants (Ref. 12: A.S. Solovkin, ZhNKh, Vol.2, 3, 611 (1957)) show that the concentration of neutral zirconium species is very high. It is found that the adsorption increases with the number of hydroxyl groups in the neutral zirconium complex; this is possibly due to the formation of hydrogen bonds between these

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groups and fluorine atoms on the PTFE surface. In the strongly acid region the adsorption is practically independent of HCl concentration. Desorption of the PTFE surface with 100% TBP and comparison of the data obtained with data on the extraction of zirconium into TBP from aqueous solution indicates that in strongly acid solution the Zr is adsorbed as  $[ZrCl_4]^0$ . The possibility of removing zirconium from the PTFE surface with TBP is good evidence that the element is adsorbed in a molecular state on the surface of hydrophobic polymeric adsorbents.

There are 8 figures, 2 tables and 13 references; 9 Soviet and 4 English. The English language references read as follows:

Ref.1: J. Ridberg, B. Ridberg. Svensk. Kemisk. Tidskr., Vol.64, 200 (1952).

Ref.5: As quoted in the text above.

Ref.7: A.E. Levitt, H. Freund. J. Am. Chem. Soc., Vol.78, 8, 1545 (1956).

Ref.8: K. Alcock, S.S. Grimley, F.V. Healy, J. Kennedy. Trans. Far. Soc., Vol.52, 1, 39 (1956).

SUBMITTED: June 9, 1960

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26605

S/186/61/003/004/004/007  
E037/E119

Zi. 4240

AUTHORS: Starik, I.Ye.; Shchebetkovskiy, V.N., and Skul'skiy, I.A

TITLE: Adsorption of radioactive isotopes on non-ion-exchange polymeric adsorbents. II. Adsorption of zirconium on fluoroplast-4 (polytetrafluoroethylene) from acid solutions of alkali-metal salts

PERIODICAL: Radiokhimiya, 1961, Vol.3, No.4, pp. 435-439

TEXT: Considering molecular adsorption processes as the distribution of uncharged species between aqueous solution and the surface of a hydrophobic non-ion-exchange adsorbent, I.Ye. Starik and I.A. Skul'skiy (Ref.1: Izv. AN SSSR, OKhN, 10: 1278 (1958)) showed that a salting-out effect is observed in molecular adsorption as well as in extraction processes. It is interesting to establish how this effect depends on the nature of the cation of the neutral salt in order to make further comparisons between molecular distribution in liquid-solid and liquid-liquid systems. The present work deals with the adsorption of tracer concentrations of Zr<sup>95</sup> from 1N nitric, hydrochloric and hydrobromic acids under conditions such that colloidal and hydrolytic forms of zirconium are  
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Adsorption of radioactive isotopes ....

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absent. Adsorption was studied as a function of concentration of alkali-metal salt. For comparison, data were also obtained on the salting-out action of these cations during Zr extraction with tributyl phosphate (TBP). The methods for studying the absorption and extraction have been described earlier (Ref.3: I.Ye. Starik, I.A. Skul'skiy, V.N. Shchebetkovskiy, pp.428-434 of the present issue).  $Zr^{95}$  was  $\gamma$ -counted in solution and not on a torsion counter as evaporation of the solutions gave an absorbing layer of salt. A conversion factor was used to convert the figures into the corresponding  $\alpha$ -activities and the adsorption was expressed, as before, by a coefficient  $K = G/C$ , where  $G$  is the activity per cm<sup>2</sup> of adsorbent and  $C$  is the activity per m<sup>3</sup> of solution. The values obtained for  $K_{adsorb}$  varied from  $4.1 \times 10^{-3}$  for 1N HCl + 3N LiCl to  $39.0 \times 10^{-3}$  for 1N HCl + 2N NH<sub>4</sub>Cl. It was found that the adsorption was dependent not only on the total anion concentration but also on the nature of the cation: for the same ionic strength the salting-out effect increases along the series  $Li < H < Na < K < NH_4$  (in HCl) and  $H < Li < Na < NH_4 < K$  (in HBr and HNO<sub>3</sub>). The effect cannot be explained by the alkali-metal cations

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Adsorption of radioactive isotopes .....

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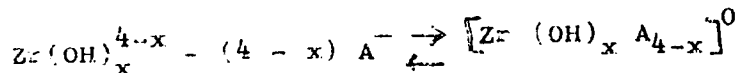
competing with Zr for adsorption on the PTFE but must be connected with a change in state of the zirconium in solution. For extraction of Zr into TBP the salting-out effect for the cations is in the reverse order:  $Li > Na > K > NH_4$  (in HCl). In this case the effect is usually attributed to the different thermodynamic activity of water in the salt solutions. For the same ionic strength as the water activity increases, from Li to Cs, the salting-out effect of the cation decreases in extraction. The reverse seems to hold for the molecular adsorption of Zr on PTFE. Total or partial reversal of this series is sometimes observed in extraction processes however, and is usually associated with organic solutions of high dielectric constant. Generally speaking, the adsorption is not contrary to extraction theory and the main points of similarity are: 1) in most cases of adsorption and extraction there is an increase in uptake with increase in concentration of similar anions, and 2) the coefficients of adsorption and extraction depend on the nature of the salting-out electrolyte. The increase in adsorption with increase in anion concentration is evidently connected with the equilibrium;

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Adsorption of radioactive isotopes ....

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Various suggestions are put forward to explain the effect of the nature of the neutral salt cation on the zirconium adsorption. As the adsorption increases with the degree of hydrolysis of the Zr solutions the effect may be due to different degrees of hydrolysis in solutions containing different alkali metal salts. Other suggestions are based on the different hydration of  $\text{Li}^+$  and  $\text{Na}^+$  compared with that of the other alkali metals and the effect of the cation on the extent of complex formation of Zr with chloride ions.

There are 4 figures, 3 tables and 8 references: 7 Soviet and the following English references:

Ref.4: R.M. Diamond. J. Phys. Chem., Vol.63, 5, 659 (1959).

SUBMITTED: June 9, 1960

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20740

S/020/61/137/002/013/020  
B101/B217

15.8115

2209

AUTHORS: Starik, I. Ye., Corresponding Member AS USSR, Skul'skiy,  
I. A., and Shchebetkovskiy, V. N.

TITLE: Spectroscopic study of zirconium chloride solutions in  
connection with the zirconium adsorption on fluoroplast-4

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 2, 1961, 356-358

TEXT: The authors deal with the problem of the distribution of Zr between  
solution and nonionogenic surface (fluoroplast-4) under the influence  
of the nature of the cation and the different degree of hydrolysis of  
the Zr complexes. In a previous paper it was shown that: 1) the  
distribution coefficient of  $Zr^{95}$  between solution and fluoroplast-4  
decreases with increasing concentration of HCl; 2) at equal ionic  
strength the adsorption of Zr increases in the presence of cations in  
the order  $Li^+ \ll H^+ \ll Na^+ < K^+ < NH_4^+$  (Fig. 1). The present paper aimed at  
establishing that this behavior is due to complex formation. For this

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S/020/61/137/002/013/020  
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Spectroscopic study of zirconium...

purpose solutions of spectroscopically pure zirconium oxychloride were studied in various concentrations by means of a CF-4 (SF-4) spectrophotometer in the presence of acids and alkali chlorides, and the optical density  $D$  as well as the molar extinction coefficient  $\epsilon$  were determined. Fig. 2 shows the absorption spectra of Zr solutions in hydrochloric and perchloric acid. In the presence of HCl, absorption increases rapidly with its concentration. The peak at 220-225 m $\mu$  in 8 N and 9 N HCl is explained by the formation of  $ZrCl_5^-$  and  $ZrCl_6^-$  complexes. The optical density in the 213-250 m $\mu$  region may serve as a standard of the intensity of complex formation between Zn and Cl ions. Fig. 3 gives the absorption spectra of zirconium solutions in the presence of HCl, LiCl, NaCl, KCl and  $NH_4Cl$ . The right-hand part of the figure gives a portion of the spectra on an enlarged scale. The distinct dependence of the optical density on the type of neutral salt added is pointed out. In the presence of  $Na^+$ ,  $K^+$ , and  $NH_4^+$ , the optical density is low and complex formation therefore slight, and, as is shown in Fig. 1, adsorption on fluoroplast-4 is considerable.

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B101/B217

Spectroscopic study of zirconium...

This is explained by the fact that in NaCl, KCl and  $\text{NH}_4\text{Cl}$  solutions Zr complexes are formed mainly by chlorine atoms being bound to free valences and the OH groups of the complex  $[\text{Zr}(\text{OH})_x\text{Cl}_{4-x}]$  are not displaced. In this case the adsorption of Zr is caused by a salting effect. In the presence of HCl or LiCl however, the hydrolysis and thus also the adsorbability of the complexes is reduced. There are 3 figures and 1 table.

ASSOCIATION: Radiyevy institut im. V. G. Khlopina Akademii nauk SSSR  
(Radium Institute imeni V. G. Khlopin, Academy of Sciences USSR)

SUBMITTED: December 19, 1960

Card 3/6

STARIK, I.Ye.; SHCHEBETKOVSKIY, V.N.; SKUL'SKIY, I.A.

Adsorption of radioactive isotopes on non-ion exchanging  
polymer adsorbents. Part 3: Adsorption of cesium,  
thallium, silver, and strontium on fluoroplast 4  
and polyethylene. Radiokhimiya 4 no.4:393-398  
'62. (MIRA 15:11)

(Radioisotopes) (Adsorption) (Polymers)

BUROVINA, I.V.; NESTEROV, V.P.; SKUL'SKIY, I.A.; FLEYSHMAN, D.G.

Characteristics of the accumulation of cesium-133 and cesium-137  
in the human and animal brain. Dokl. AN SSSR 154 no.5:1229-  
1230 F'64. (MIRA 17:2)

1. Predstavleno akademikom V.N. Chernigovskim.

BUROVINA, I.V.; GLAZUNOV, V.V.; LEONT'YEV, V.G.; NESTEROV, V.P.; SKUL'SKIY, .  
I.A.; FLEYSHMAN, D.G.; SHMITKO, M.N.

Content of lithium, sodium, potassium, rubidium and caesium in the  
muscles of marine animals of the Barents and Black Seas. Dokl.  
AN SSSR 149 no.2:413-415 Mr '63. (MIRA 16:3)

1. Institut evolyutsionnoy fiziologii AN SSSR. Predstavleno akademikom  
A.P.Vinogradovym.  
(MARINE FAUNA) (MINERALS IN THE BODY) (MUSCLE)

1. The results of the study are as follows:

The results of the study show that the specific activity of the brain tissue, both in the case of the control and in the case of the patients, is within the limits of the normal range.

(MIRA 18:2)

The results of the study show that the specific activity of the brain tissue, both in the case of the control and in the case of the patients, is within the limits of the normal range.

L 31182-66 EWP(j)/EWI(m)/ETC(f)/T RM/DS/AN  
ACC NR: AP6022542

SOURCE CODE: UR/0186/65/007/006/0703/0710

AUTHOR: Skul'skiy, I. A.; Glazunov, V. V.

ORG: none

15 15 94  
92 B  
TITLE: Adsorption of micro-amounts of cesium on ftoroplast-4, polyethylene, and glass from aqueous solutions of sodium tetraphenylborate

SOURCE: Radiokhimiya, v. 7, no. 6, 1965, 703-710

TOPIC TAGS: adsorption, cesium, aqueous solution, polyethylene plastic, glass, sodium compound, teflon, desorption, intermolecular complex, ion exchange, biochemistry

ABSTRACT: Adsorption of cesium from aqueous solutions onto polyethylene and ftoroplast-4 [Soviet Teflon] drops sharply when sodium tetraphenylborate is added. Cesium adsorbed on the surface of polyethylene and ftoroplast-4 is readily desorbed by acetone and nitrobenzene. Liquids with low dielectric constant (benzene and ether) are poor desorbants. On the basis of adsorption and desorption data, it can be proposed that on the nonionogenic hydrophobic surfaces of polyethylene and ftoroplast-4, cesium is present as a complex with a tetraphenylborate anion. In complex solutions containing specific organic anions, adsorption of alkaline cations on nonionogenic hydrophobic surfaces is possible. This process can be of special significance in biological systems. If organic anions exist in biological systems which specifically interact with

Card 1/2

UDC: 511.183.5:546.36

0915

0550

L 31182-66

ACC NR: AP6022542

alkaline ions, then apparently surface phenomena can play as large a role in cell selectivity as processes of ion exchange in polyelectrolytic gels or the passage of lyophylic complexes through "nonaqueous" membranes. 7  
Orig. art. has: 2 tables. [JPRS]

SUB CODE: 07, 11, 06 / SUBM DATE: 19Mar65 / ORIG REF: 006 / OTH REF: 014

Card 2/2 CC

*Handwritten:* 24.1.1957, 10.11.

137-1957-12-23424

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 85 (USSR)

AUTHORS: Skol'nikiy, M. K., Podolskiy, Yu. K.

TITLE: Contamination of Steel by Non-metallic Inclusions. Due to the Disintegration of the Coating of the sinkhead Extensions  
(Zagryazneniye stali nemetallicheskimislyucheniymi v resul'tate razrusheniya obmazuaki pribylnykh razdetok)

PERIODICAL: V sb.: Primeneniye radioaktivnykh izotopov v chernoy metallurgii. Chelyabinsk, Knigoizdat, 1957. pp 151-157

ABSTRACT: Radioactive isotopes were employed in an investigation of the effect of the composition of the refractory material (RM) used as coating for the sinkhead extensions, and in a study of the effect of the conditions of coating on the contamination of steel by non-metallic inclusions (NMI). The RM used for coating had the following composition: 85 percent chamotte and 15 percent fire clay in a 10 percent solution of sulfide lye, as well as 60 percent of graphite, 20 percent chamotte and 20 percent fireproof clay in liquid glass with an addition of 1.0-1.5 percent of 10 percent NaOH solution. The isotope  $Ca^{45}$  was introduced into the RM in such quantities as to produce 50 mcurie per 1 kg.

Card 1/2



137-1957-12-23424

Contamination of Steel by Non-metal. Inclusions (cont.)

71-ton ingots were cast and rolled into 120 mm-square stock, from which samples for the electrolytic extraction of NMI were taken at various points relative to the height and cross-section of the ingot. It was established that 11 out of the 14 cast ingots contained radioactive NMI, unevenly distributed throughout the volume of the ingot, which indicated contamination of steel by NMI due to the disintegration of the coating. Experiments using an RM coating of both kinds applied to sinkhead extensions at 50° and 100° showed that the steel is contaminated with NMI from the RM of the sinkhead extensions.

A.Sh.

1. Steel-Contamination
2. Refractory materials-Applications
3. Refractory materials-Inspection methods

Card 2/2

SKUL'SKIY, M. K.

18  
Hydrodynamics of Liquid Steel in the Ingot Mold. A. A. Morozovskii, L. K. Stetskov, M. K. Skul'skii, and S. I. Rudnev. *Steel*, 1967, (1), 24-30. [In Russian]. The object of the investigation described was to find the duration and study the character of natural convection in the mould during the solidification of 7-ton ingots. <sup>18</sup>Fe and <sup>32</sup>P were used as tracers. It was found that with killed steel the colder layers at the solidification front descend and displace hotter metal along the ingot axial region; with rimming steel peripheral metal ascends and descends along the axial region. Metal circulation near the top of the ingot continues for most of the freezing time. It is suggested that ingot-solidification calculations must take liquid-metal convection into account as well as conductivity. —S. K.

SKUL'SKIY, M.K.

6788\* (Russian.) Hydrodynamics of Molten Steel in Molds.  
Gidrodinamika zhidkoi stali v lizhnitsa. A. A. Zborovsky,  
L. K. Stralkov, M. K. Skul'skiy, and E. I. Rabinovich. *Stal*, v.  
17, Jan. 1957, p. 24-30.

Investigation of hydrodynamic phenomena during solidification,  
carried out by means of radioactive tracers. Vigorous mixing  
occurs. The direction of circulating streams for rimmed and  
killed steels are not identical.

mt  
rg

SOV/137-58-8-16554

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 46 (USSR)

AUTHORS: Zborovskiy, A.A., Strelkov, L.K., Skul'skiy, M.K.,  
Rabinovich, Kh.I.

TITLE: Employment of Autoradiography Methods in Determination of  
the Rate of Solidification of Ingots of Rimmed and Killed Steel  
(Opredeleniye skorosti zatverdevaniya slitkov spokoynoy i  
kipyashchey stali metodom avtoradiografii)

PERIODICAL: V sb.: Staleplavil'n. proiz-vo, Moscow, Metallurgizdat,  
1958, pp 184-196

ABSTRACT: Radioactive Fe<sup>59</sup> was introduced into killed steel at different intervals of time following the casting of this steel into a 2400-mm high mold equipped with a lined cover and having the following dimensions: 760x680 mm (bottom) and 720x510 mm (top). Experimental ingots were rolled into square billets (120 mm per side), specimens were taken along the length of the rolled billet, and 5-mm thick transverse templets were cut from it for purposes of radiographic studies. Assuming that the ratio of the surface of activated zone to the surface of a transverse section of the ingot remains unchanged during

Card 1/2

SOV/137-58-8-16554

Employment of Autoradiography Methods (cont.)

rolling, radiograms were employed in the computation of the thickness of a layer which had solidified by the time the isotope was introduced. The data obtained coincide almost completely with the curve  $D=2.6 \sqrt{t}$ , where D is thickness of the solidified layer of metal (expressed in mm); t is the time (in minutes) which has elapsed after the mold had been filled; 2.6 (cm/min) is the solidification constant of the steel in a cast-iron mold (obtained by the method of overturning of analogous ingots). When the molds with the ingots were not disturbed until the metal had solidified completely and the isotope was introduced into the ingot in three successive portions, four boundaries of isotope distribution, i.e., four zones of activity (the maximum activity being in the central zone) were observed in all but one experiment. It is assumed that the appearance of an "extra" zone is the result of intensified agitation of metal during the displacement (shaking) of the molds, a fact which may, therefore, have an adverse effect on distribution of liquates in an ingot. The crystallization of rimmed steel was investigated in an analogous manner by introducing radioactive isotopes of Fe or S into ingots weighing 6.9 tons. In computing the thickness of the solidified layer, the volumetric reduction of metal which occurs during rolling, apparently, was not taken into consideration with sufficient accuracy because the results obtained diverge somewhat from the values obtained by means of the "Chipmen" formula,  $D=3.05+22.56 \sqrt{t}$ . 1. Steel--Properties 2. Steel--Autoradiography Card 2/2 3. Iron isotopes (Radioactive)--Applications L.K.

SOV/129-59-3-6/16

AUTHORS: Rabinovich, Ye.I., Candidate of Technical Sciences and  
Skul'skiy, M.K. and Biktagirov, K.K., Engineers

TITLE: Influence of Residual Aluminium on the Impact Strength  
of Steel at Low Temperatures (Vliyaniye ostatocznego  
alyuminiya na udarnuyu vyazkost' stali pri nizkikh  
temperaturakh)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov,  
1959, Nr 3, pp 25 - 28 + 2 plates (USSR)

ABSTRACT: So far, the influence on cold-shortness of nitrogen,  
oxygen and other elements which are contained in steel  
in very small quantities has been little studied. The  
authors have investigated the influence of aluminium,  
which is usually contained in steel in very small  
quantities (up to 0.02%) and changes as a function of  
the quality of the preliminary deoxidation, the method  
of introducing aluminium and various other factors.  
They also studied the influence of various heat-treatment  
regimes and of the microstructure on the cold-shortness  
of steel. The investigations were made on basic open-  
hearth steel, 15K, produced by the scrap-ore process in  
accordance with current practice applied at the

Card 1/4

SOV/129-59-3-6/16

Influence of Residual Aluminium on the Impact Strength of Steel at Low Temperatures

Magnitogorsk Metallurgical Combine. The preliminary deoxidation was effected in the furnace by means of ferromanganese and ferrosilicon, whilst the final deoxidation was effected with silicocalcium and aluminium or ferrosilicon and aluminium. The content of residual aluminium in the steel was regulated by supplementary addition of aluminium into the ingot moulds. The experimental ingots were rolled into 40 mm thick sheet and then cut into specimens. The chemical composition of the metal was as follows: 0.14-0.17% C, 0.16-0.22% Si, 0.38-0.47% Mn, 0.027-0.036% S, 0.016-0.024% P. The influence was studied of the aluminium on the impact strength of a non-heat-treated and heat-treated steel. The following heat treatments were applied: quenching from 880, 920, 960 and 1 000 °C in water followed by tempering at 660-680 °C; normalisation annealing at the enumerated temperatures; annealing at the same temperatures followed by cooling at a speed of 40-50 °C/sec.

Card2/4

In addition, the influence was also investigated of the

SOV/129-59-3-6/16

Influence of Residual Aluminium on the Impact Strength of Steel at Low Temperatures

microstructure on the impact strength at +20, 0, -20 and -40 °C. The contents of residual aluminium were determined by spectrum analysis. On the basis of the results, which are graphed, the following conclusions are arrived at.

- 1) Cold-shortness of low-carbon steel depends on the content of residual aluminium and the size of the real grain.
- 2) The higher the cooling speed of the steel from the austenitic range, the finer will be the grain and the lower will be the cold-shortness. The degree of over-heating (up to 960 °C) has less influence on the grain size and the cold-shortness than the cooling speed.
- 3) After annealing, steel with traces of residual aluminium has a very pronounced cold-shortness at -40, -20 and 0 °C; at these temperatures, the impact strength is negligible, amounting to about 1 kg/cm<sup>2</sup>.
- 4) With increasing content of residual aluminium, the critical cold-shortness temperatures decrease. For a content of residual aluminium of about 0.02%, the impact strength is satisfactory at -20 and 0 °C, irrespective

Card3/4



Influence of Residual Aluminium on the Impact Strength of Steel at  
Low Temperatures

SOV/129-59-3-6/16  
of the cooling speed and of the degree of over-heating  
(up to 960 °C).

5) For reducing the cold-shortness of components with large  
cross-sections made of low-carbon steel, it is desirable  
that there should be a residual aluminium content of  
0.02-0.03%. There are 7 figures and 4 Soviet references.

ASSOCIATION: Magnitogorskiy metallurgicheskiy kombinat  
(Magnitogorsk Metallurgical Combine)

Card 4/4

S/737/61/000/000/002/010

**AUTHORS:** Rabinovich, Ye.I., (1), Lazarev, L.A., (2), Zarzhitskaya, N.G., (2), Skul'skiy, M.K., (2), Kravchenko, V.F., (1). [ (1) = Candidate of Technical Sciences; (2) = Engineer ].

**TITLE:** Influence of vibration on the formation and quality of a rimmed-steel ingot.

**SOURCE:** Stal', sbornik statey. Ed. by A.M. Yampol'skiy. Moscow. 1961, 258-273.

**TEXT:** It is important to obtain a rimmed ingot with an external skin > 8 mm thick to protect the honeycomb blowholes from oxidation during soaking in pits. High-grade ingots with up to 0.2%C were obtained at plants in the Urals. To accelerate the rate of pouring and to improve the quality further, a vibrator designed by the Moscow Steel Institute was used in experimental castings. An a.c.-motor-driven eccentric vibrator was mounted on the platform of a 50-ton casting car and was operated at approximately 1,500 cpm and at amplitudes which varied from 0.4-0.8 mm to 1.5-1.8 mm, depending on the elasticity of the track and the change in load on the car. Vibration times varied from 2'45" to 24'20"; test runs were timed at various stages of the casting process, and the capping of the ingots was done

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Influence of vibration on the formation...

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either immediately after cessation of vibration or some time later. Longitudinal sections were photographed, and samples were cut from the 3, 5, 8, 12, 13, 15, 17, 20, and 25% horizons, as measured from the top of the ingot. Templets were cut for metallography; the templets were deep-etched, sulphur-printed, and chemically analyzed. A detailed description is given of the casting process, and the composition of the test melts is tabulated. The results of the casting of 7-ton ingots at various time rates, with and without vibration, are also tabulated. The character of the rimming of ingots subjected to vibration is shown to be greatly altered, and shortly after commencement of the vibration the rimming becomes violent, to the point of gushing and spraying. Instead of the ordinary peripheral rimming of steel Cr.3 (St.3) along the interface of the liquid and solid phase, the vibrated steel rims all over. Contrary to the continuous growth of ordinary ingots, which begins 1-2 min after the pouring is stopped, vibrated ingots sag 30-50 mm, and even up to 100 mm, within 7-8 min and then grow slightly, but never back to their initial level, unless the vibration is stopped prematurely. As to structure, vibration eliminates the ordinarily observed difference between the upper and the lower part of the ingot; however, some tendency toward the formation of cracks in the lower part of the ingot is observed. In the ordinary ingots at the plant, the dense external skin is 8-15 mm thick (thicker with slower pouring and with lower Mn content). The length of the honeycomb blowholes is about 80-100 mm; the

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Influence of vibration on the formation...

S/737/61/000/000/002/010

secondary blowholes are spherical and lie at 100-125 mm from the outer surface, forming a vertical lace up to the rising part of the ingot. Vibration causes disappearance of the blowholes, going from the periphery toward the center and thickening the skin. 10-12 min of vibration result in a total disappearance of the blowholes. However, the zone formerly occupied by the primary honeycomb blowholes is always occupied by sparse small, circular, bubbles, 1-4.5 mm dia, some 5-10 mm apart. Macrostructurally, vibration is conducive to a displacement of the shrinkage porosity into the depth of the ingot. Vibration affects the distribution of sulfides only very little. Vibrated ingots have sulfide veins that are the remnants of the now-filled blowholes. Spot-sample analysis at various depths shows that the liquating-element content in the outer zone remains equal or is even increased by the vibration. C, S, and P contents in the outer zone are not appreciably affected by vibration. Both the zone of concentrated liquation and the zone of porosity are located more deeply in vibrated ingots, as shown by chemical analysis. In summary, vibration affords production and faster pouring of a rimmed steel with a higher C content and an improved production of semikilled steel. There are 9 figures and 2 tables; no references.

ASSOCIATION: None given.

Card 3/3

SKUL'SKIY, S.

Ways for improving the technology of milling wheat into high-grade  
flour. Muk.-elev. prom. 29 no.11:19-22 N 63. (MIRA 17:2)

1. Zamestitel' glavnogo inzhenera Voronezhskogo mel'nichnogo kombinata.

SKUL'SKIY, S. I.

"Digital computers" by I. S. Evdokimov, G. P. Evstigneev,  
B. N. Kriushin. Reviewed by S. I. Skul'skii. Priborostroenie  
no.10:31-32 0 :62. (MIRA 15:10)

(Calculating machines) (Evdokimov, I. S.)  
(Evstigneev, G. P.) (Kriushin, B. N.)

KOROTKIN, Vasilii Ivanovich; PODSEYPANIN, Arkadiy Ivanovich;  
SAVOST'YANOV, D.D.; SIVKOV, M.V.; SKUL'SKIY, S.I.;  
USAN, A.M., red.; USTIYANTS, V.A., red.

[Design and repair of calculating and punched card machines;  
perforators, controllers, and sorting machines] Konstruktsiia  
i remont schetno-perforatsionnykh mashin; perforatory, kont-  
rol'niki i sortiroval'nye mashiny. Moskva, Gosstatizdat.  
Pt.1. 1963. 166 p. (MIRA 17:8)

SHV 70, V., kand.tekhn.nauk; SHUL'SKIY, V., nauchnyy sotrudnik

Deformations in foundations of large-panel apartment houses.  
In: Stroi. tekhn. no.9:27-38 S '63. (MIRA 14:10)

1. Shul'skiy, V. Laboratoriya osnovaniy i fundamentov  
Sovetskogo nauchno-issledovatel'skogo instituta po stroitel'stvu  
(for Stroi.). 2. Laboratoriya osnovaniy i fundamentov  
Sovetskogo nauchno-issledovatel'skogo instituta po stroitel'stvu  
(for Stroi'skiy).

(Foundations)



5411 28 5817 VLP  
BOBRIYEVICH, A.P., sotrudnik; BONDARENKO, M.N., sotrudnik; GNEVUSHEV, M.A., sotrudnik; KIND, N.D., sotrudnik; KORESHKOV, B.Ya., sotrudnik; KURYLEVA, N.A., sotrudnik; NEFEDOVA, Z.D., sotrudnik; POPUGAYEVA, L.A., sotrudnik; POPOVA, Ye.E., sotrudnik; SKUL'SKIY, V.D., sotrudnik; SMIRNOV, G.I., sotrudnik; YURKEVICH, R.K., sotrudnik; FAYNSHTEYN, G.Kh., sotrudnik; SHCHUKIN, V.N., sotrudnik; BUROV, A.P., nauchnyy redaktor; SOBOLEV, V.S., nauchnyy redaktor; VERSTAK, G.V., redaktor izdatel'stva; KRYNOCHKINA, K.V., tekhnicheskiiy redaktor

[Diamonds of Siberia] Almazы Sibiri. [Moskva] Gos.nauchno-tekhn. izd-vo lit-ry po geol. i okhrane neдр, 1957. 157 p. (MLRA 10:7)

1. Russia (1923- U.S.S.R.) Ministerstvo geologii i okhrany neдр.
2. Amakinakaya ekspeditsiya Glavuralsibgeologii Ministerstva geologii i okhrany neдр SSSR (for Bobriyevich, Bondarenko, Gnevushev, Kind, Koreshkov, Kuryleva, Nefedova, Popugayeva, Popova, Skul'skiy, Smirnov, Yurkevich, Faynshteyn, Shchukin)  
(Siberia--Diamonds)

KARTASHEV, V.P.; LILEYEV, M.V.; SKUL'SKIY, V.Yu.; SHUKSTOVA, Z.N.

Observation of the total solar eclipse of June 30, 1954, by the  
Sverdlovsk eclipse expedition. Biul.VAGO no.23:3-17 '58.  
(MIRA 11:11)

1. Ural'skiy gosudarstvennyy universitet im. A.M. Gor'kogo i  
Sverdlovskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo  
obshchestva.

(Eclipses, Solar--1954)

3,5000

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S/169/60/000/007/009/016

A005/A001

Translation from: Referativnyy zhurnal, Geofizika, 1960, No. 7, p. 202, # 8460

AUTHOR: Skul'skiy, V.Yu.

TITLE: Observation of Noctilucent Clouds Above the Urals During the  
International Geophysical Year

PERIODICAL: Tr. Soveshchaniya po serebristym oblakam, 1958 (P.I).Tartu, 1959,  
pp. 56-67 (German summary)

TEXT: A Ural detachment of an expedition was organized for studying according to the IGY plan the noctilucent clouds above the Urals in 1957; the work of the detachment was carried out under the general guidance and the scientific consultation of the Institute of Applied Geophysics of the AS USSR. The equipment of the detachment consisted of five aerophotocameras АФА-ИМ (АФА-ИМ) and photocameras. The observations were performed at six stations located between  $46^{\circ}47' - 61^{\circ}17'$  n. lat. and  $59^{\circ}57' - 61^{\circ}39'$  e. long. Altogether, the number of events of noctilucent clouds in the summer season 1957 amounted to 14, in 1958 to 10. The following conclusions were drawn on the basis of the preliminary processing of the observation materials obtained in 1957 and 1958: 1) the maximum number

Card 1/2

3.5120

34513  
S/169/62/000/002/068/072  
D228/D301

AUTHOR: Skul'skiy, V. Yu.

TITLE: Observations of noctilucent clouds in the Urals in 1959

PERIODICAL: Referativnyy zhurnal Geofizika, no. 2, 1962, 25, abstract 2G154 (Tr. VI Soveshchaniya po serebristym ob-lakam, 1959, Riga, AN LatvSSR, 1961, 171-178)

TEXT: The author describes observations of noctilucent clouds that were made in 1959 by a joint expedition of the Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kiy (Urals State University im. A. M. Gor'kiy) and the Sverdlovskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva (Sverdlovsk Division of the All-Union Astronomic and Geodetic Society). The observations were conducted at 8 points in accordance with a program similar to that for previous years (see RZhGeofiz, no. 7, 1960, 8460). Reconnaissances, theodolite observations, and also observations on relative photographic photometry were made at all points. An aerophotographic ca-

Card 1/2

SKUL'SKIY, V.Yu.

Method of determining the relatively uneven sagging of the  
foundation of a building or structure. Osn., fund. i mekh.  
grun. 8 no.1:28-29 '66.

(MIRA 19:1)

SKUL'SKIY, Ye.

SKUL'SKIY, Ye., krupchatnik

Use of rolls with deep grooves. Muk.-elev.prom.24 no.2:23-24 F '58.  
(MIRA 11:4)

1. Davlekanovskaya mel'nitsa No.3 Bashkirskogo upravleniya  
khlehoproduktov.

(Grain milling machinery)

SKUL'SKIY, Yu.V.

K-195 machine for welding necks to the covers of alkaline batteries.  
Avtom. svar. 1/4 no.8:83-84 Ag '61. (MIRA 14:9)  
(Storage batteries--Welding)  
(Electric welding--Equipment and supplies)

SKUL'SKIY, Yu.V.; VASIL'YEV, V.G.

Resistance butt welding of cast-iron pipe. Avtom. svar. 15  
no.3:7-12 Mr '62. (MIRA 15:2)

1. Ordena Trudovogo Krasnogo Znameni institut elektrosvarki  
imeni Ye.O. Patona AN USSR.  
(Pipe, Cast iron--Welding)



KOLESNIK, B.P.; KIRDO, I.V.; SKUL'SKIY, Yu.V.

Local heat treatment of hardened and tempered pipe. Avtom. svar.  
15 no.6:26-32 Je '62. (MIRA 15:5)

1. Ukrainskiy nauchno-issledovatel'skiy truvnyy institut (for  
Kolesnik). 2. Ordena Trudovogo Krasnogo Znameni Institut  
elektrosvarki imeni Ye.O.Patona AN USSR (for Kirdo, Skul'skiy).  
(Pipe, Steel--Welding)

SKUL'SKIY, Yu.V.; TISHURA, V.I.; REPIN, N.N.; BEKHALOV, V.N.; KUZNETSOVA, Z.I.

Machine for the welding of cast iron pipe joints and fittings  
for sanitary engineering systems. Avtom. svar. 16 no.11:72-  
77 N '63. (MIRA 17:1)

1. Institut elektrosvarki imeni Ye.O. Patona AN UkrSSR (for  
Skul'skiy, Tishura). 2. Nauchno-issledovatel'skiy institut  
sanitarnoy tekhniki (for Repin, Bekhalov, Kuznetsova).

SKUL'SKIY, Yu.V.

Resistance butt welding of high-strength cast iron with  
steel. Avtom. svar. 16 no.12:13-17 D '63. (MIRA 17:1)

1. Institut elektrosvarki imeni Patona AN UkrSSR.

SKUL'SKIY, Yu.V.; MAKAROV, M.D.; POPOV, A.N.; KHOZHLOV, P.L.; SOBOLEV, N.T.

Cast and welded flanged cast-iron pipe. Avtom.svar. 18 no.11:57-  
59 N '65. (MIRA 18:12)

1. Institut elektrosvarki im. Ye.O.Patona AN UkrSSR (for  
Skul'skiy, Makarov, Popov). 2. Makeyevskiy truboliteynyy  
zavod im. Kuybysheva (for Khozhlov, Sobolev). Submitted  
March 24, 1965.

SKULTETY, Laszlo; CZIE, Gyorgy

Designing transistor circuits. Pt.2.I. The semiconducting layer diode.  
(To be contd.) Radiotechnika 12 no.8:235-236 '62.

DITRO, I. G., KARADY, I., SKULTETY, S.

Experimental data on the mechanism of Filatov's method of tissue therapy. Szemeszet No. 1, 1950. p. 5-9

1. Of the Ophthalmological Clinic (Director—Dr. Gabor Ditroi),  
and of the Pharmacological Institute (Director—Dr. Miklos Jancso),  
Szeged University.

CIAL 19, 5, Nov., 1950

\_SKULTIL, V.; PAYER, J.

Spongiose kidney. Rozhl. chir. 41 no.7:485-487 J1 '62.

1. Ftizeologicka katedra Slovenskeho ustavu pre doskolovanie lekarov  
v Podunajskych Biskupiciach, prednosta MUDr. K. Virsik.  
(KIDNEY DISEASES case reports)

SKULTINS, V.

Assistant to the board of editors of wall newspapers;  
a review of J. Lusceviski's book Sienas Avize (Wall Newspaper).  
p. 74. PADOMJU LATVIJAS KOMUNISTIS, Riga. Vol. 11, no. 5, May 1956.

SOURCE:

East European Accession List (EEAL) Library of Congress  
Vol. 5, no. 8, August 1956.



FREYDZON, I.R.; VEREBRYUSOV, I.A., kandidat tekhnicheskikh nauk, retsenzent;  
SKULYABIN, V.A., kandidat tekhnicheskikh nauk, redaktor; PETERSON,  
M.M., tekhnicheskiiy redaktor

[Electric drive of ship machinery] Elektroprivod sudovykh mekhaniz-  
mov. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit. i sudostroit.  
lit-ry, 1954. 410 p. (MLBA 9:8)

(Electricity on ships) (Electric driving)

ACC NR: AP6015711

(A)

SOURCE CODE: UR/0413/66/000/009/0125/0125

INVENTOR: Gendler, L. V.; Skulyari, M. N.

ORG: None

TITLE: An Isodromic speed controller. Class 46, No. 181446 [announced by the Central Scientific Research Diesel Institute (Tsentral'nyy nauchno-issledovatel'skiy dizel'nyy institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 125

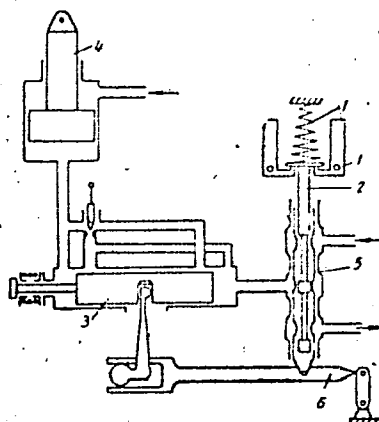
TOPIC TAGS: engine control system, speed regulator

ABSTRACT: This Author's Certificate introduces an isodromic continuous speed controller used in diesel engines equipped with centrifugal tachometers. This unit is equipped with a valve located in a sleeve. This valve controls the motion of the isodrome piston which is rigidly fixed in the channel joining the valve with the servomechanism. To improve reliability, the sleeve is made so that it can move in the axial direction and can be moved mechanically by means of a lever linkage connected to the isodrome piston.

Card 1/2

621.43-551.44:531.15

ACC NR: AP6015711



1--centrifugal tachometer; 2--valve; 3--  
isodrome piston; 4-- servomechanism; 5--  
sleeve; 6--lever linkage

SUB CODE: 13,21 / SUBM DATE: 19Dec63

Card 2/2

SKUMAN, Andrey Petrovich

[Character of socialist production relations; lectures on the political economy of socialism] Kharakter sotsialisticheskikh proizvodstvennykh otnoshenii; lektsii po politicheskoi ekonomii sotsializma. Minsk, Izd-vo Belgosuniv. im. V.I. Lenina, 1960. (MIRA 13:12)

32 p.

(Economics)

SKUMAN, Andrey Petrovich; SAVITSKIY, F.I., red.; DUBOVIK, A.P., tekhn.  
red.

[Development of production relations during the transition to  
communism] Razvitie proizvodstvennykh otnoshenii pri perekhode  
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nogo i professional'nogo obrazovaniia BSSR, 1961. 33 p.  
(MIRA 15:1)

(Labor and laboring classes)

RAKOV, Yakov Gdal'yevich; SKUMAN, Andrey Petrovich; KAPRANOVA, N.V.,  
red.; ZIMA, Ye.G., tekhn. red.

[All for the good of man; program for creating the highest  
standard of living in the world] Vse dlia blaga cheloveka;  
programma sozdaniia samogo vysokogo v mire zhiznennogo urov-  
nia. Minsk, 1962. 35 p. (Obshchestvo po rasprostraneniu  
politicheskikh i nauchnykh znanii Belorusskoi SSR, no.2)  
(MIRA 15:4)

(Russia--Economic conditions)

SKUMBIN, M.K.; SOLONININ, A.V.; SHNEYDER, T.M.; RYASHKO, B.V.; GAVRYUSHIN, N.M.;  
KHARLANOVICH, I.V.

Complex technology for train and freight operations in a division.  
Zhel. dor. transp. 46 no.8:14-21 Ag '64.

(MIRA 17:11)

1. Nachal'nik Permskogo otdeleniya Sverdlovskoy dorogi (for Skumbin).
2. Zamestitel' nachal'nika Permskogo otdeleniya Sverdlovskoy dorogi (for Soloninin).
3. Glavnyy inzh. Permskogo otdeleniya Sverdlovskoy dorogi (for Shneyder).
4. Nachal'nik otdela dvizheniya Permskogo otdeleniya Sverdlovskoy dorogi (for Ryashko).
5. Zamestiteli nachal'nika otdela dvizheniya Permskogo otdeleniya Sverdlovskoy dorogi (for Gavryushin, Kharlanovich).

SKUMPE, V., instruktor po podvodnomu plavaniyu

More about skin-diving. IUn.tekh. 4 no.8:77 Ag '60.  
(MIRA 13:9)

(Diving, Submarine)



SKUMPU, I.

A glass factory. Tekh.mol. 22 no.11:30-31 N '54. (MIRA 7:12)

1. Inzhener steklozavoda "Bukharest."  
(Rumania--Glass manufacture)

SKUMS, I.N., inzh.

Deformation of freezing columns. Shakht.stroi. 9 no.5:10-13 My '65.  
(MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy institut.

KOZHEVNIKOV, S.N.; SKICHKO, P.Ya., kand.tekhn.nauk; SKUMS, V.A., inzh.

Experimental investigation of a rotor car-dumper. Trudy Inst.  
chern.met.AN URSR 16:3-8 '62. (MIRA 15:12)

1. Chlen-korrespondent AN UkrSSR (for Kozhevnikov).  
(Dumping appliances)

KOZHEVNIKOV, S.N.; SKICHKO, P.Ya., kand.tekhn.nauk; SKUMS, V.A., inzh.;  
VISHENSKIY, I.I., inzh.

Experimental investigation of scale cars. Trudy Inst.chern.met.  
AN URSR 16:9-14 '62. (MIRA 15:12)  
(Weighing machines)

SKUMDIN, A. M.

Structural Engineering

Dissertation: "Engineering-Economic Factors of the Erection of Structures  
Using a Movable Concrete Form." Cand Tech Sci, Moscow Engineering Economics  
Inst imeni Sergo Ordzhonikidze, 26 Mar 54. (Vechnyaya Moskva, Moscow, 16 Mar 54)

SO: SUM 213, 20 Sept 1954

L 40344-66 WT(m)/T/MP(t)/MTI TJP(c) JG/JD/DS

ACC NR: AP6018931

(A)

SOURCE CODE: UR/0364/66/002/006/0640/0645

AUTHOR: Palanker, V. Sh.; Skundin, A. M.; Bagotskiy, V. S.

51  
508

ORG: All-Union Scientific Research Institute of Current Sources, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy institut istochnikov toka)

TITLE: Capacity of the electric double layer on mercury in melts and concentrated nitrate solutions

SOURCE: Elektrokimiya, v. 2, no. 6, 1966, 640-645

TOPIC TAGS: electric ~~double layer~~ <sup>capacitance</sup>, nitrate, mercury, electrode

ABSTRACT: The differential capacity of the electric double layer on a dropping mercury electrode was measured in melts and concentrated aqueous solutions of alkali metal nitrates over a wide range of temperatures and concentrations. The results are presented in the form of the dependence of the capacity on the charge. The zero charge potentials were measured (1) from the maximum on the curves representing the dropping period versus the potential, and (2) by means of a streaming electrode. The surface charges were calculated from  $C, \phi$  curves ( $C$  being the capacity and  $\phi$  the potential) by graphical integration. It is shown that in fused nitrates as well as halides, the dependence of the capacity on the potential is expressed by smooth curves with a minimum near the point of zero charge; the capacity decreases somewhat as the temperature is raised. In solutions containing very small amounts of water (0.1-0.3 mole  $H_2O$  per mole of salt), the

Card 1/2

UDC: 541.13

L 40344-66

ACC NR: AP6018981

character of the curves does not change; there is only a slight increase in capacity near the point of zero charge as the water concentration is raised. Starting with 1.5 moles of water per mole of salt, a plateau appears at first, followed by a hump, whose height increases with decreasing electrolyte concentration and temperature. At still higher water contents in concentrated nitrate solutions, approximately the same behavior is observed as in the case of perchlorates. No definite conclusions concerning the structure of the electric double layer could be reached on the basis of the data obtained. Authors are very grateful to B. B. Damaskin for taking part in a discussion of the work and for useful suggestions. Orig. art. has: 7 figures.

SUB CODE: 07/ SUBM DATE: 24Jun65/ ORIG REF: 017/ OTH REF: 008

Card 2/2 hs

SKUNDIN, B. M.

Gidromekhanizatsiia zemliarykh rabot na stroitel'stve gidrouzlov / Use of  
hydraulic machinery in earth works for the building of hydro development  
centers/. Moskva, Znanie, 1953.

SO: Monthly List of Russian Accessions, Vol. 6 No. 8 November 1953



1. SKHIDAN, G.I.
  2. USSR ( 600)
  4. Tractors - motors.
  7. Study of factors which increase the durability of tractor transmissions. Vest. mash. 32 No. 10, 1952.
9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

Skundin, G. I.

USSR/ Engineering - Machinery

Card 1/1      Pub. 128 - 2/34

Authors      : Skundin, G. I.

Title        : Ways of increasing the life-span of splined joints

Periodical   : Vest. mash. 12, 6-9, Dec 1954

Abstract     : Methods resulting in the increase of the life-span of splined joints employed on the DT-54 and KD-35 tractors are discussed, and a description is given of methods for the production of pinion gears and splines. Tables; graphs; diagrams.

Institution   : .....

Submitted    : .....

SKUNDIN, G. I.

USSR/Miscellaneous---machine construction

Card 1/1

Author : Skundin, G. I., Cand. in Mech. Sciences  
Title : Some problems in the correction of heavily loaded gears  
Periodical : Vest. mash. 34/3, 24-31, Mar/1954  
Abstract : The life of gears depends on their rational correction. The Scientific Institute for Tractors used gears from tractors for research. It was found that the greatest danger of breaking comes from fatigue in the metal. Factories found it necessary to make gears out of more highly alloyed steel instead of a slightly alloyed steel 20-X. Increasing the profile was found to improve resistance to breaking. Two Russian references, latest dated 1952.  
Institution : .....  
Submitted : .....

SKUNDIN, G. I.

U S S R .

10568\* Investigation of the Basic Parameters of the Wear of Gears. *Issledovanie osnovnykh parametrov iznosa zubnykh soedinenii.* (Russian.) G. I. Skundin. *Avtomobil'naya i traktornaya promyshlennost'*, 1955, no. 4, Apr., p. 9-12. Factors include effect of dust, non-parallelism of grooves, warp and crumpling stresses, period of operation, and hardness of gear slots. Photographs, tables.

*Sci Res. Autotractor Ind.*

*gob*  
*gob*

SKUNDIN, G.I., kandidat tekhnicheskikh nauk

Selection of efficient corrections transmission drive gears  
used in the DT-54 tractor. Avt. trakt. prom. no.7:12-16  
J1 '55. (MLRA '8:9)

1. Nauchno-issledovatel'skiy avtotraktorny institut  
(Tractors--Transmission devices)

SKUNDIN, G.

SKUNDIN, G.  
Some problems of correcting strongly weighted cogwheels. Tr. from  
Russian. p. 415

Vol. 7, No. 11, Nov. 1955 Budapest, Hungary GEP

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5  
No. 3, March, 1956

SKUNDIN, G.I., kandidat tekhnicheskikh nauk.

Basic problems of designing long-life tractor transmission systems.  
Avt. i trakt. prom. no.10:5-8 0 '55. (MLRA 9:1)

1. Nauchno-issledovatel'skiy avtotraktornyy institut.  
(Tractors--Transmission devices)

SKUNDIN, G. I., kandidat tekhnicheskikh nauk.

The effect of mechanical impurities in lubricants on the life  
of gear wheels. Avt. i trakt. prom. no.2:12-15 F '56.(MLBA 9:6)

1.Nauchno-issledovatel'skiy avtotraktorny institut.  
(Gearing) (Lubrication and lubricants)



SKUNDIN, G. I.

AID P - 4278

Subject : USSR/Engineering

Card 1/1 Pub. 128 - 3/25

Author : Skundin, G. I., Kand. Tech. Sci.

Title : Calculation of flexural stresses in heavily-loaded tractor gears.

Periodical : Vest. mash. #2, p. 10-14, F 1956

Abstract : Flexural stresses in toothed gears of tractors are calculated according to various formulae and the results are compared with tests. Charts, diagrams, tables. 8 references, 1937-1951.

Institution : None

Submitted : No date

SKUNDIN, G.I., kand.tekhn.nauk

Calculating the surface tension of gears under heavy stress.  
Trakt. i sel'khoz mash. no.1:12-16 Ja '58. (MIRA 11:4)

1.Nauchno-issledovatel'skiy avtotraktornyy 'nstitut.  
(Tractors--Transmission devices)

SKUNDIN, G.I., kand.tekhn.nauk

Ways of lowering the weight of tractor transmission devices.

Trakt. i sel'khoz mash. no.5:11-16 My '58.

(MIRA 11:6)

(Tractors--Transmission devices)

SKUNDIN, G. I., Doc of Tech. Sci -- (diss) "Heavily Supported Gear  
Transmissions. (Study of the Chief Reasons for breakdown, Computation,  
Principle of Correction)," Moscow, 1959, 29 pp (Moscow Automechanics  
Institute) (NL 4-69, 118)